



BIOLOGICAL EFFICACY TEST RESULTS REPORT

Tablo 1. Basic application information

Report Registration Number	100621-1
Product name/Test Substance	Envira Universal
Product /License Holder	Chrysamed Kimya San. ve Dış. Tic. Ltd. Şti.
Active ingredients and rates (%)	1.2 g/L Permethrin, 0.3 g/L Prallethrin
Formulation type	Liquid (UL)
Sample arrival date	May 2021
Aim of test	Insecticidal/acaricidal efficacy test, 5 pieces, 500 ml sealed sample in plastic packaging
Product sampling address	Chrysamed Kimya San. ve Dış. Tic. Ltd. Şti., Mustafa Kemal Atatürk Mahallesi, Aydın Caddesi, No: 132 Torbalı, İzmir
Production and expiration dates	05.2021-05.2023
Serial number/Batch number	M060321IP002
Experiment date	28.05.2021-10.06.2021
Tested organisms	<i>Culex</i> sp. (Mosquito, Varsak, Antalya strain) <i>Culex</i> sp. (Mosquito, Döşemealtı, Antalya strain) <i>Musca domestica</i> L. (House fly, Pamukkale, Denizli strain) <i>Musca domestica</i> L. (House fly, Varsak, Antalya strain) <i>Blattella germanica</i> L. (German cockroach, Kemer, Antalya strain) <i>Periplaneta americana</i> L. (American cockroach, Varsak, Antalya strain) <i>Rhipicephalus</i> sp. (Tick, Kepez, Antalya strain) <i>Rhipicephalus</i> sp. (Tick, Muratpaşa, Antalya strain) <i>Ctenocephalides</i> sp. (Flea, Kepez, Antalya strain) <i>Ctenocephalides</i> sp. (Flea, Muratpaşa, Antalya strain) <i>Mesobutmus</i> sp. (Scorpion, Mersin strain) <i>Androctonus</i> sp. (Scorpion, Mersin strain) <i>Monomorium</i> sp. (Ant, Güvenlik, Muratpaşa, Antalya strain) <i>Lasius</i> sp. (Ant, Arapsuyu, Konyaaltı, Antalya strain) <i>Allocosa</i> sp. (Örümcek, Antalya strain) <i>Aelurillus</i> sp. (Örümcek, Antalya strain)
Life stages and age	Adult
Test area	Closed area- Laboratory conditions
Test method	Rezidüel satış
Test room conditions	24±2 °C (temperature), % 50±10 (relative), 12 h dark: 12 h light
Exposure time	1 h
Test period	24 h
Holding conditions	24±2 °C (temperature), % 50±10 (relative), 12 h dark: 12 h light
Replicates	3
Application methods	Spraying
Tested doses	Mosquito: 0.5 gr ai/m ² Ant: 0.03 gr ai/m ² Spider: 0.04 gr ai/m ² Flea: 0.1 gr ai/m ² Cockroach: 0.125 gr ai/m ² Scorpion: 0.04 gr ai/m ² House fly: 0.0625 gr ai/m ² Tick: 0.1 gr ai/m ²
Etkiyi Değerlendirme Metodu	The effect of the product sprayed surface on arthropods, on the immobility of individuals and the number and rate of individuals who died after 24 hours
Results	Presented in Tables 2-9
Conclusion	The product has demonstrated biological activity in accordance with the standards set by the Ministry of Health of Turkey.

This report consist of 9 pages.

*P:1/9

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Table 2. Toxicity of Envira Universal on *Culex* sp. (Mosquito, Varsak, Antalya strain) and *Culex* sp. (Mosquito, Döşemealtı, Antalya strain) strains at 0.5 g ai/m² dose

Replicates	The number of tested insect	<i>Culex</i> sp. (Mosquito, Varsak, Antalya strain)			
		1 h		24 h	
		Knock-Down	Knock down rates (%)	Mortality	Mortality rates (%)
Control	10	0	0.0	0	0.0
1	10	10	100	10	100
2	10	10	100	10	100
3	10	10	100	10	100
Mean	10	10	100	10	100

Replicates	The number of tested insect	<i>Culex</i> sp. (Mosquito, Döşemealtı, Antalya strain)			
		1 h		24 h	
		Knock-Down	Knock down rates (%)	Mortality	Mortality rates (%)
Control	10	0	0.0	0	0.0
1	10	10	100	10	100
2	10	10	100	10	100
3	10	10	100	10	100
Mean	10	10	100	10	100

Approval date
10.06.2021


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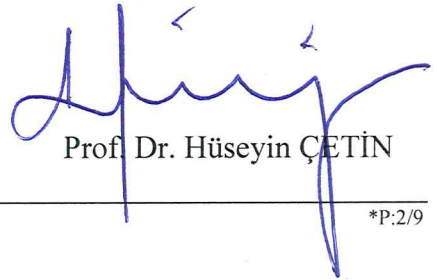

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Table 3. Toxicity of Envira Universal on *Musca domestica* L. (House fly, Pamukkale, Denizli strain) and *Musca domestica* L. (House fly, Varsak, Antalya strain) strains at 0.0625 g ai/m² dose

Replicates	The number of tested insect	<i>Musca domestica</i> L. (House fly, Pamukkale, Denizli strain)			
		1 h		24 h	
		Knock-Down	Knock down rates (%)	Mortality	Mortality rates (%)
Control	10	0	0.0	0	0.0
1	10	10	100	10	100
2	10	10	100	10	100
3	10	10	100	10	100
Mean	10	10	100	10	100

Replicates	The number of tested insect	<i>Musca domestica</i> L. (House fly, Varsak, Antalya strain)			
		1 h		24 h	
		Knock-Down	Knock down rates (%)	Mortality	Mortality rates (%)
Control	10	0	0.0	0	0.0
1	10	10	100	9	90.0
2	10	10	100	10	100
3	10	10	100	8	80.0
Mean	10	10	100	9	90.0

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Table 4. Toxicity of Envira Universal on *Blattella germanica* L.(German cockroach, Kemer, Antalya strain) and *Periplaneta americana* L.(American cockroach, Varsak, Antalya strain) strains at 0.125 g ai/m² dose

Replicates	The number of tested insect	<i>Blattella germanica</i> L.(German cockroach, Kemer, Antalya strain)			
		1 h		24 h	
		Knock-Down	Knock down rates (%)	Mortality	Mortality rates (%)
Control	10	0	0.0	0	0.0
1	10	10	100	10	100
2	10	10	100	10	100
3	10	10	100	10	100
Mean	10	10	100	10	100

Replicates	The number of tested insect	<i>Periplaneta americana</i> L.(American cockroach, Varsak, Antalya strain)			
		1 h		24 h	
		Knock-Down	Knock down rates (%)	Mortality	Mortality rates (%)
Control	10	0	0.0	0	0.0
1	10	10	100	9	90.0
2	10	10	100	10	100
3	10	10	100	8	80.0
Mean	10	10	100	9	90.0

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Table 5. Toxicity of Envira Universal on *Rhipicephalus* sp. (Tick, Kepez, Antalya strain) and *Rhipicephalus* sp. (Tick, Muratpaşa, Antalya strain) strains at 0.1 g ai/m² dose

Replicates	The number of tested insect	<i>Blattella germanica</i> L.(German cockroach, Kemer, Antalya strain)			
		1 h		24 h	
		Knock-Down	Knock down rates (%)	Mortality	Mortality rates (%)
Control	10	0	0.0	0	0.0
1	10	10	100	10	100
2	10	10	100	10	100
3	10	10	100	10	100
Mean	10	10	100	10	100

Replicates	The number of tested insect	<i>Periplaneta americana</i> L.(American cockroach, Varsak, Antalya strain)			
		1 h		24 h	
		Knock-Down	Knock down rates (%)	Mortality	Mortality rates (%)
Control	10	0	0.0	0	0.0
1	10	10	100	10	100
2	10	10	100	10	100
3	10	10	100	10	100
Mean	10	10	100	10	100

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Table 6. Toxicity of Envira Universal on *Ctenocephalides* sp. (Flea, Kepez, Antalya strain) and *Ctenocephalides* sp. (Flea, Muratpaşa, Antalya strain) strains at 0.1 g ai/m² dose

Replicates	The number of tested insect	<i>Ctenocephalides</i> sp. (Flea, Kepez, Antalya strain)			
		1 h		24 h	
		Knock-Down	Knock down rates (%)	Mortality	Mortality rates (%)
Control	10	0	0.0	0	0.0
1	10	10	100	10	100
2	10	10	100	10	100
3	10	10	100	10	100
Mean	10	10	100	10	100

Replicates	The number of tested insect	<i>Ctenocephalides</i> sp. (Flea, Muratpaşa, Antalya strain)			
		1 h		24 h	
		Knock-Down	Knock down rates (%)	Mortality	Mortality rates (%)
Control	10	0	0.0	0	0.0
1	10	10	100	10	100
2	10	10	100	10	100
3	10	10	100	10	100
Mean	10	10	100	10	100

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Table 7. Toxicity of Envira Universal on *Mesobutmus sp.* (Scorpion, Mersin strain) and *Androctonus sp.* (Scorpion, Mersin strain) strains at 0.04 g ai/m² dose

Replicates	The number of tested insect	<i>Mesobutmus sp.</i> (Scorpion, Mersin strain)			
		1 h		24 h	
		Knock-Down	Knock down rates (%)	Mortality	Mortality rates (%)
Control	4	0	0.0	0	0.0
1	4	4	100	4	100
2	4	4	100	4	100
3	4	4	100	4	100
Mean	4	4	100	4	100

Replicates	The number of tested insect	<i>Androctonus sp.</i> (Scorpion, Mersin strain)			
		1 h		24 h	
		Knock-Down	Knock down rates (%)	Mortality	Mortality rates (%)
Control	3	0	0.0	0	0.0
1	3	3	100	3	100
2	3	3	100	3	100
3	3	3	100	3	100
Mean	3	3	100	3	100

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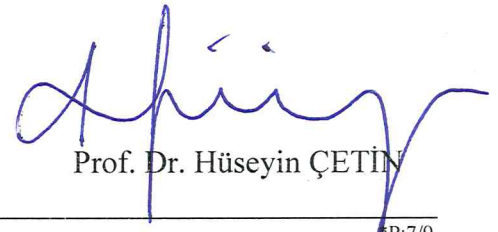

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Table 8. Toxicity of Envira Universal on *Monomorium* sp. (Ant, Güvenlik, Muratpaşa, Antalya strain) and *Lasius* sp. (Ant, Arapsuyu, Konyaaltı, Antalya strain) strains at 0.03 g ai/m² dose

Replicates	The number of tested insect	<i>Monomorium</i> sp. (Ant, Güvenlik, Muratpaşa, Antalya strain)			
		1 h		24 h	
		Knock-Down	Knock down rates (%)	Mortality	Mortality rates (%)
Control	10	0	0.0	0	0.0
1	10	10	100	10	100
2	10	10	100	10	100
3	10	10	100	10	100
Mean	10	10	100	10	100

Replicates	The number of tested insect	<i>Lasius</i> sp. (Ant, Arapsuyu, Konyaaltı, Antalya strain)			
		1 h		24 h	
		Knock-Down	Knock down rates (%)	Mortality	Mortality rates (%)
Control	10	0	0.0	0	0.0
1	10	10	100	10	100
2	10	10	100	10	100
3	10	10	100	10	100
Mean	10	10	100	10	100

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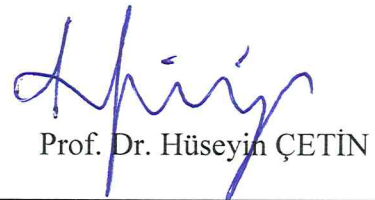
Table 9. Toxicity of Envira Universal on *Allocosa* sp.(Örümcek, Antalya strain) and *Aelurillus* sp. (Örümcek, Antalya strain) strains at 0.04 g ai/m² dose

Replicates	The number of tested insect	<i>Allocosa</i> sp.(Örümcek, Antalya strain)			
		1 h		24 h	
		Knock-Down	Knock down rates (%)	Mortality	Mortality rates (%)
Control	3	0	0.0	0	0.0
1	5	5	100	5	100
2	5	5	100	5	100
3	5	5	100	5	100
Mean	5	5	100	5	100

Replicates	The number of tested insect	<i>Aelurillus</i> sp. (Örümcek, Antalya strain)			
		1 h		24 h	
		Knock-Down	Knock down rates (%)	Mortality	Mortality rates (%)
Control	4	0	0.0	0	0.0
1	4	4	100	4	100
2	4	4	100	4	100
3	4	4	100	4	100
Mean	4	4	100	4	100

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Chemical Analysis Report

Report Number/Cod:	K-02072021-101
Product Name:	Envira Universal
Company:	Chrysamed Kimya San. ve Dış Tic. Ltd. Şti.
Formulation type:	Ultra-low volume liquid
The composition of ingredient(s):	1.2 g/L Permethrin (a/h) 0.3 g/L Prallethrin (a/h)
Arrival dates of samples:	May 2021
Aim of tests, sample rate:	Testing of physical properties and chemical analysis, 3x500mL plastic bottles
Address from which specimens were received:	Chrysamed Kimya San. ve Dış Tic. Ltd. Şti. Mustafa Kemal Atatürk Mah. Aydın Cad. No:132 Torbalı/İZMİR
Production date of samples:	May 2021-May 2023
Reference Number:	M060321IP002
Place of sampling, date and issue:	-
Test method:	HPLC, 90:10 ACN:HOH (v/v), 1.0 mL/min (Permethrin, prallethrin), 40°C, C18 column, UV Detector, injection: 20µL

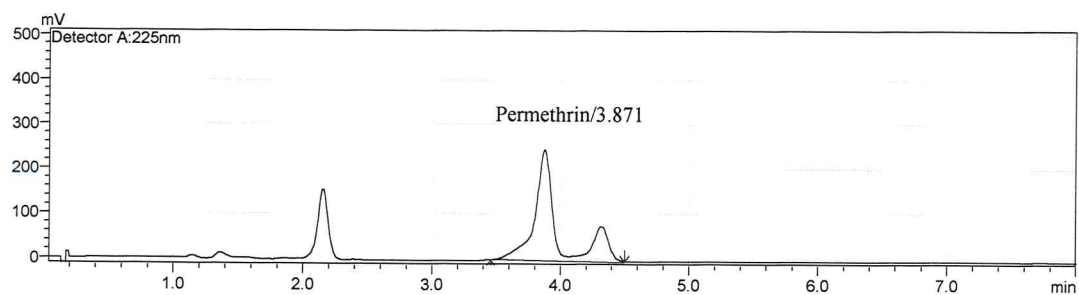
	Unit	Equipment	Date of Analysis	Specification	Result
Chemical parameter					
Permethrin	g/L(w/v)	HPLC	28.05.2021	±15	1.212
Prallethrin	g/L(w/v)	HPLC	28.05.2021	±15	0.302
Physical parameter					
Appearance	-	Visual	28.05.2021	Transparent, homogeneous liquid	Transparent, homogeneous liquid
pH (20°C)	-	CIPAC, MT 75.3	28.05.2021	4-7	7.0
Density (20°C)	g/cm ³	CIPAC, MT 3.2	28.05.2021	Unspecified	0.9936
Viscosity	cP	CIPAC MT 22.1	28.05.2021	≤ 100	≤ 100
Assessment	Formulation meets criteria				

Assoc Prof.Dr. Murat AKARSU

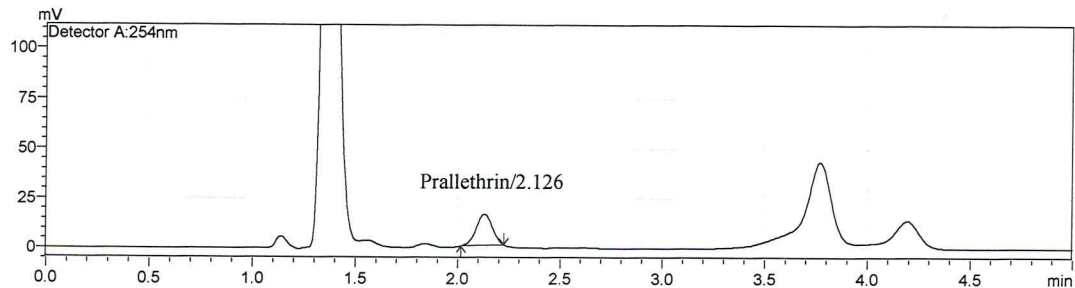
Assoc Prof.Dr. Esin AKARSU

Results of HPLC analysis:

Data	Peak ID	Retention time (min)	Area	Concentration (ppm)
1	Permethrin	3.871	3024004	63.681



Data	Peak ID	Retention time (min)	Area	Concentration (ppm)
2	Prallethrin	2.126	85918	47.643



MA

SN